CYPRESS
INTEGRATION SOLUTIONS

EXP-2000

SPX Expansion interface modules

The EXP-2000 provides additional Door/Panel interface points to most SPX products. The EXP-2000 uses a local RS-485 network through an SPX gateway device. Additional access points can be added as needed.

MADE IN USA

EXP-2000
Part 15 Class A

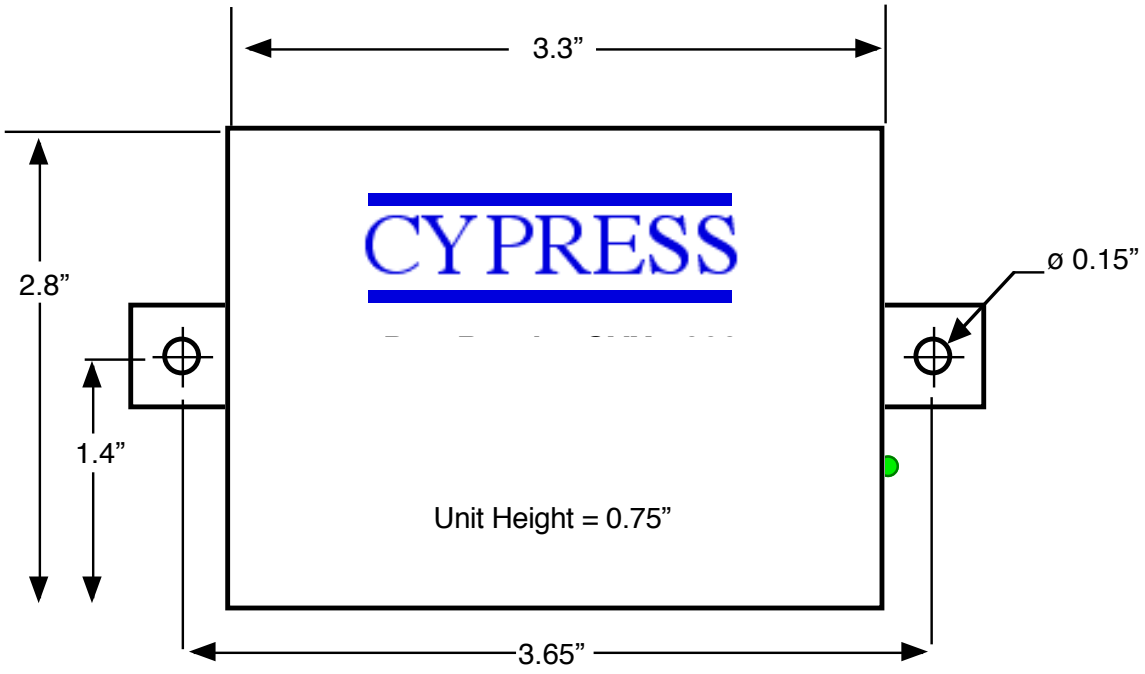
CYPRESS COMPUTER SYSTEMS INC.
RoHS

EXP-2000_MAN_0314

Electrical and Mechanical Specifications

Physical	Aluminum Enclosure 3.5" x 2.75" x .75" each unit	
Temp	Storage(-55˚C to + 150˚C) Operating(-40˚C to +80˚C)	
Humidity	95% (non-condensing)	
Power	Input	Unreg Input 8 to 16 VDC* @ 200mA Max
	Output	+5VDC @100mA
Data I/O	Interface	Reader 0- 30VDC LED - 0 - 30VDC Analog 0 - 5 VDC

* See Rating Curve for Temperature and Power ratings



External Dimensions and Mounting Holes

This complies with part 15 of the FCC rules

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

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EXP-1000 Operation Compatibility

EXP-2000 Compatibility with Cypress Suprex Systems

The EXP-2000 modules are designed to provide additional reader interface channels to some systems utilizing Cypress Suprex devices. Not all Cypress Suprex systems support the use of the EXP-1000 modules.

The EXP-2000 is a product enhancement that has been added to the Suprex product line.
EXP-2000 modules may not be compatible with Suprex products that were purchased prior to May of 2010.

The following listing indicates which systems support the addition of EXP-1000 modules.

The EXP-2000 is compatible with current versions of the following Cypress Products:

SPX-7400/10 Fiber Optic Suprex - Multi-mode or single mode

SPX-7200 Lan Network Suprex

SPX-5521 RF Suprex 900Mhz

SPX-5601 RF Suprex 2.4 GHz

SPX-5621 RF Suprex 2.4 GHz

SPX-7500 RS-485 Suprex

Products not specifically listed are not compatible with the EXP-2000 module.

EXP-2000 Operation

The EXP-2000 can be utilized as an additional door and panel interface pair (Remote and Central) with an existing Suprex® SPX-7400, SPX-7500. SPX-5600, or SPX-7200 system. Each EXP-2000 can be set to a unique address (1 through 15, see DIP switch chart).

EXP Units used with a Cypress Suprex Gateway device will be set to the same address on both the Central and Remote sides of the system.

SPX Systems:
The EXP-2000 is used with Suprex Gateway devices (SPX-7400/10 (FO), SPX-7500 (485), SPX-5600 (RF), SPX-7200(ET)) to add Central and Remote pairs.

EXP-2000 Setup:

The DIP switch will be preset and labeled to determine whether the EXP-1000 will operate as a Wiegand Receiver (Remote) or Wiegand Transmitter (Central).

Initialization of the EXP-2000:

1. Power off, Set DIP Switch #1 ON, All other DIP switches off

   Set DIP Switch #3 OFF if using EXP-2000 with Suprex systems

2. Apply power to the EXP-2000.
   The LED should illuminate with a solid Green indication.

3. Remove power and turn off all DIP Switches.

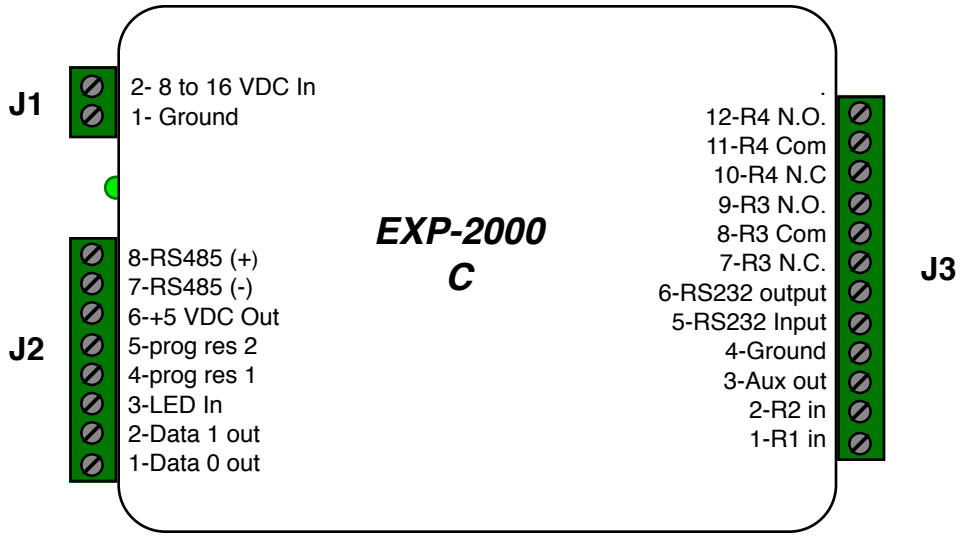
4. The unit is now initialized for usage with the appropriate system. Proceed to the following pages to set DIP switches for address and Wiegand direction.

Setting EXP-2000 Addresses:

When using the EXP-2000 units with a Suprex gateway system, the Addresses must be set consecutively from 1 to the maximum address to be used with the system. Most Suprex gateway systems will support a maximum of 8 devices
(refer to Gateway manual)

Example: An SPX-7400 system is to be setup with 4 pairs of EXP-2000 units.
The Addresses should be set: 1, 2, 3, 4 for the 4 pairs that will be used with the system and not 2,3,4,5 or 4,6,7,8 etc.

EXP-2000 C Electrical Connections



J1 Connections

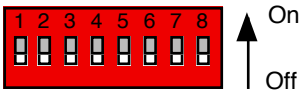
2 - 8 to 16 VDC	Power IN (+)
1 - Ground	Power IN (-)

J2 Connections

8 - RS485 (+)	RS-485 Input
7 - RS485 (-)	RS-485 Input
6 - +5 VDC OUT	5 Volt Power out
5 - Analog 2	Analog Input #2
4 - Analog 1	Analog Input #1
3 - LED I/O	LED Signal Input/Output
2 - Data 1 Out	Wiegand Data 1 Output
1 - Data 0 Out	Wiegand Data 0 Output

J3 Connections

12 - Relay #4	N.O. Contact
11 - Relay #4	Common
10 - Relay #4	N.C. Contact
9 - Relay #3	N.O. Contact
8 - Relay #3	Common
7 - Relay #3	N.C. Contact
6 - RS232 Output	Serial Data OUT
5 - RS232 Input	Serial Data IN
4 - Ground	Wiegand/RS232 Ground
3 - Aux	Digital Output
2 - Relay # 2	Digital Input
1 - Relay # 1	Digital Input



Address settings for the EXP-2000

Cypress Suprex® systems will support different numbers of additional EXP-2000 units depending upon the model number. Refer to the specific documents for the SPX-7400, SPX-5600, or SPX-7200 for maximum ratings.

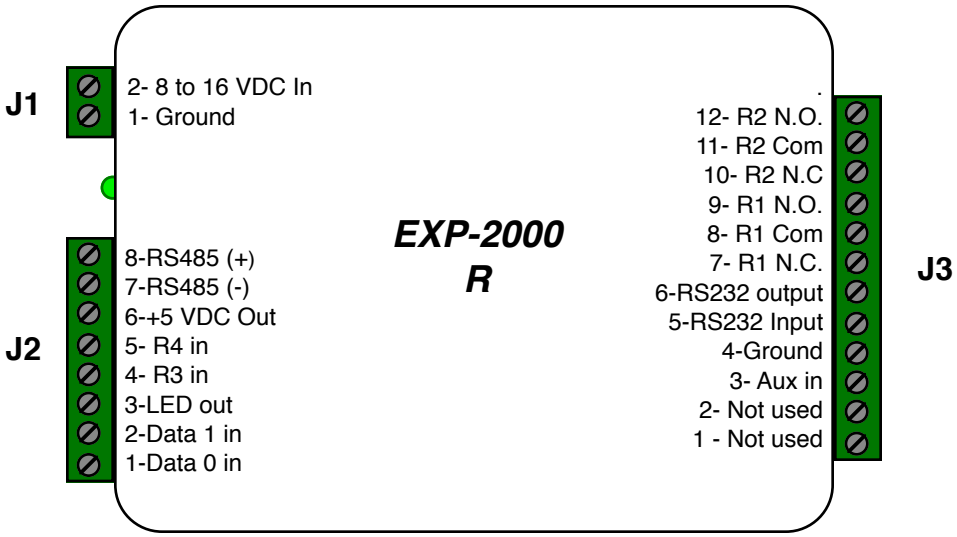
Note:

To operate as a "Central" unit, DIP Switch #2 must be On.

DIP Switch Address Settings

ADDRESS	SWITCH
	12345678
1	01000001
2	01000010
3	01000011
4	01000100
5	01000101
6	01000110
7	01000111
8	01001000
9	01001001
10	01001010
11	01001011
12	01001100
13	01001101
14	01001110
15	01001111
16	01010000

EXP-2000 R Electrical Connections



J1 Connections

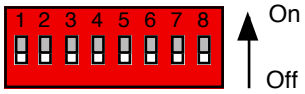
2 - 8 to 16 VDC	Power IN (+)
1 - Ground	Power IN (-)

J2 Connections

8 - RS485 (+)	RS-485 Input
7 - RS485 (-)	RS-485 Input
6 - +5 VDC OUT	5 Volt Power out
5 - Relay #4	Analog Input #4
4 - Relay # 3	Analog Input #3
3 - LED I/O	LED Signal Output
2 - Data 1 In	Wiegand Data 1 Input
1 - Data 0 In	Wiegand Data 0 Input

J3 Connections

12 - Relay #2	N.O. Contact
11 - Relay #2	Common
10 - Relay #2	N.C. Contact
9 - Relay #1	N.O. Contact
8 - Relay #1	Common
7 - Relay #1	N.C. Contact
6 - RS232 Output	Serial Data OUT
5 - RS232 Input	Serial Data IN
4 - Ground	Wiegand/RS232 Ground
3 - Aux in	Digital Input
2 -	Not used
1 -	Not used



Address settings for the EXP-2000

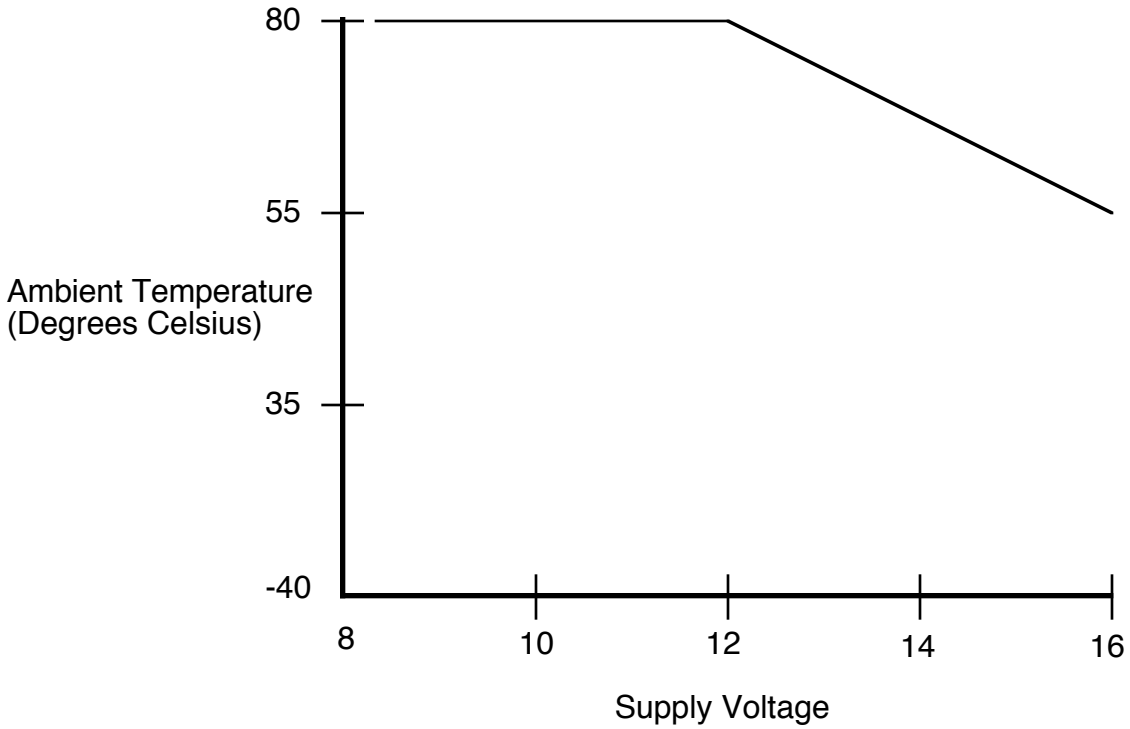
Cypress Suprex® systems will support different numbers of additional EXP-2000 units depending upon the model number. Refer to the specific documents for the SPX-7400, SPX-5600, or SPX-7200 for maximum ratings.

Note:
To operate as a "Remote" unit, DIP Switch #2 must be Off.

DIP Switch Address Settings

ADDRESS	SWITCH
	12345678
1	00000001
2	00000010
3	00000011
4	00000100
5	00000101
6	00000110
7	00000111
8	00001000
9	00001001
10	00001010
11	00001011
12	00001100
13	00001101
14	00001110
15	00001111
16	00010000

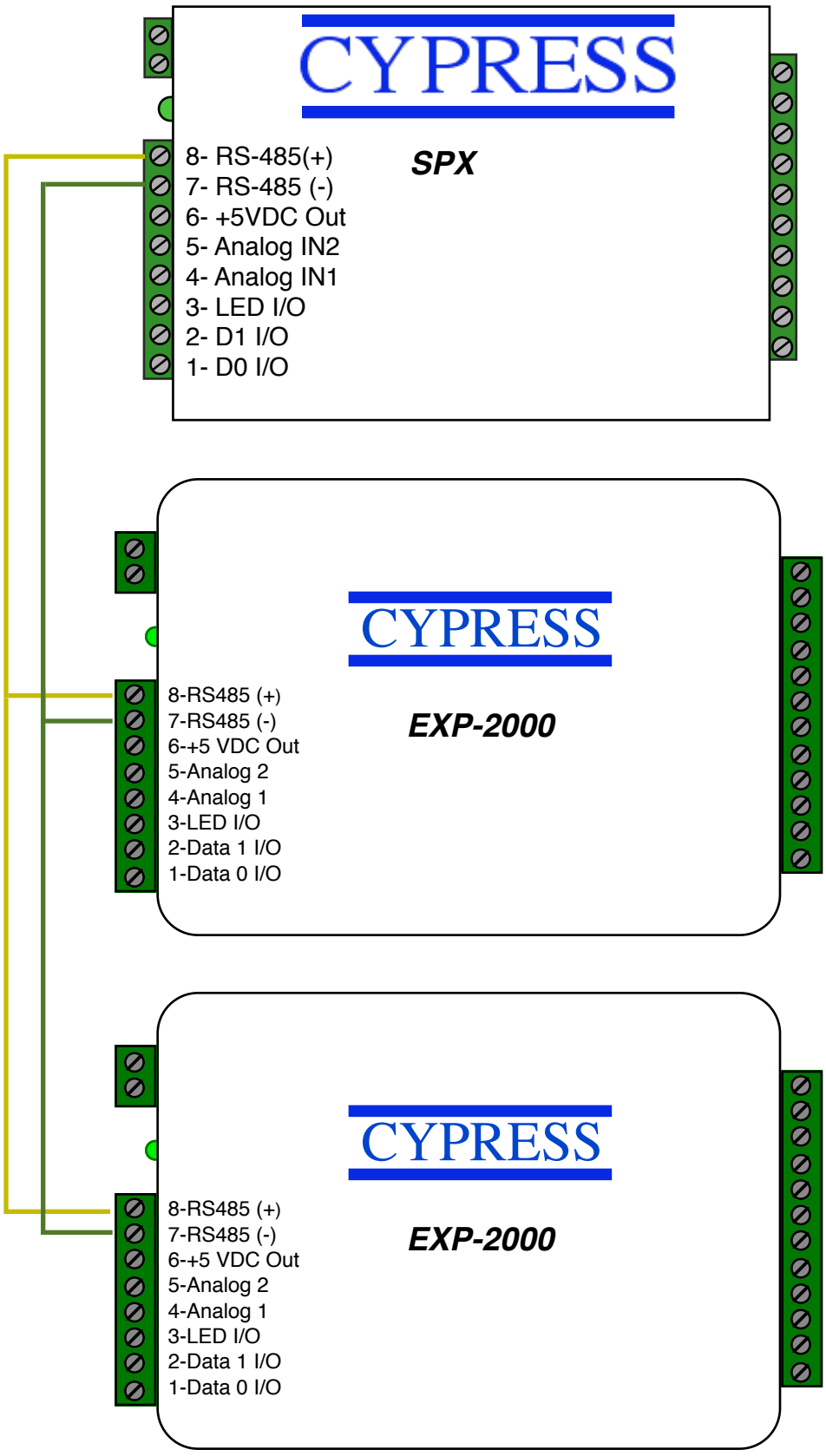
Electrical and Environmental Specifications



Temperature/Voltage de-rating curve

The EXP units should be operated with a filtered 12 Volt nominal DC supply.
Any voltage between 8 and 16 volts can be utilized by following the temperature /voltage derating curve. Voltage should not exceed 16 VDC under normal operating conditions.

SPX to EXP-2000 Connections

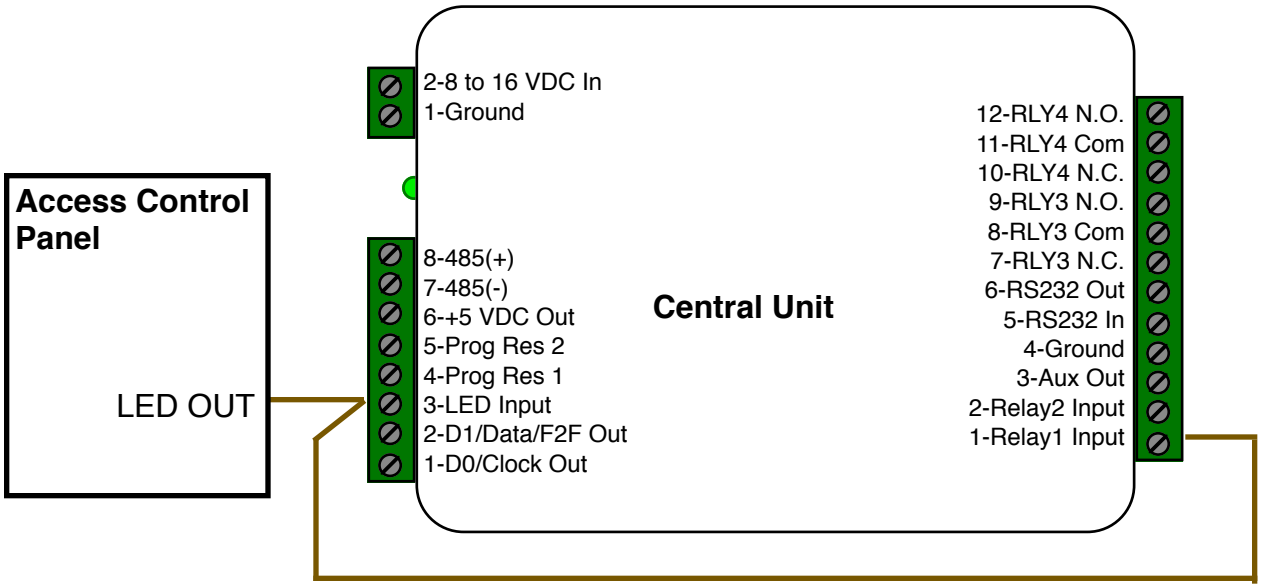


Suprex Operation and Initial Setup

Central Side Basic Panel Connections

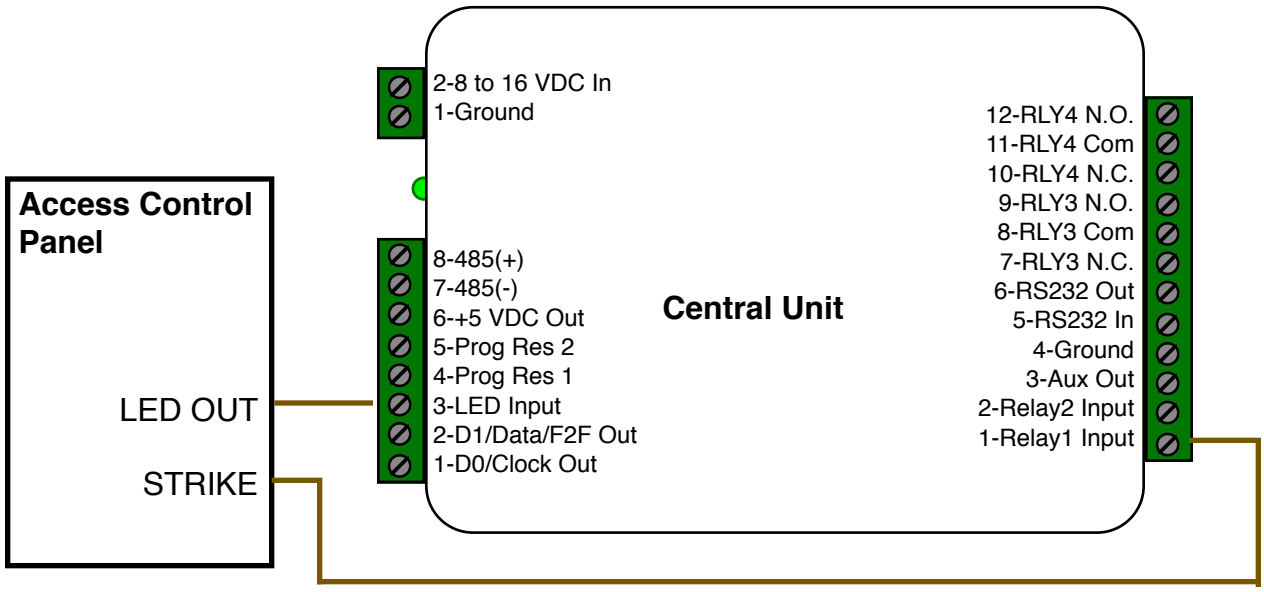
To activate the relay on the Remote unit connect as shown below. These connections can be used to allow the Remote relay to operate a DOOR STRIKE, GATE, or other locking hardware. Refer to following pages in this document for details of each I/O operation and connection. The Relay inputs are active LOW and will activate the relay when connected to ground.

There are two relays available for accessory outputs at the Remote end. Either relay can be used to provide the Door Strike or Gate activation function. This example uses Relay 1.



Typical Access Control Panel Connection to activate Door Strike and reader LED. Strike follows LED

Only Relay and LED Connections are shown for clarity, refer to previous diagrams for Power,Data and communications connections.



Typical Access Control Panel Connection to activate Door Strike and reader LED. Strike follows separate panel output.

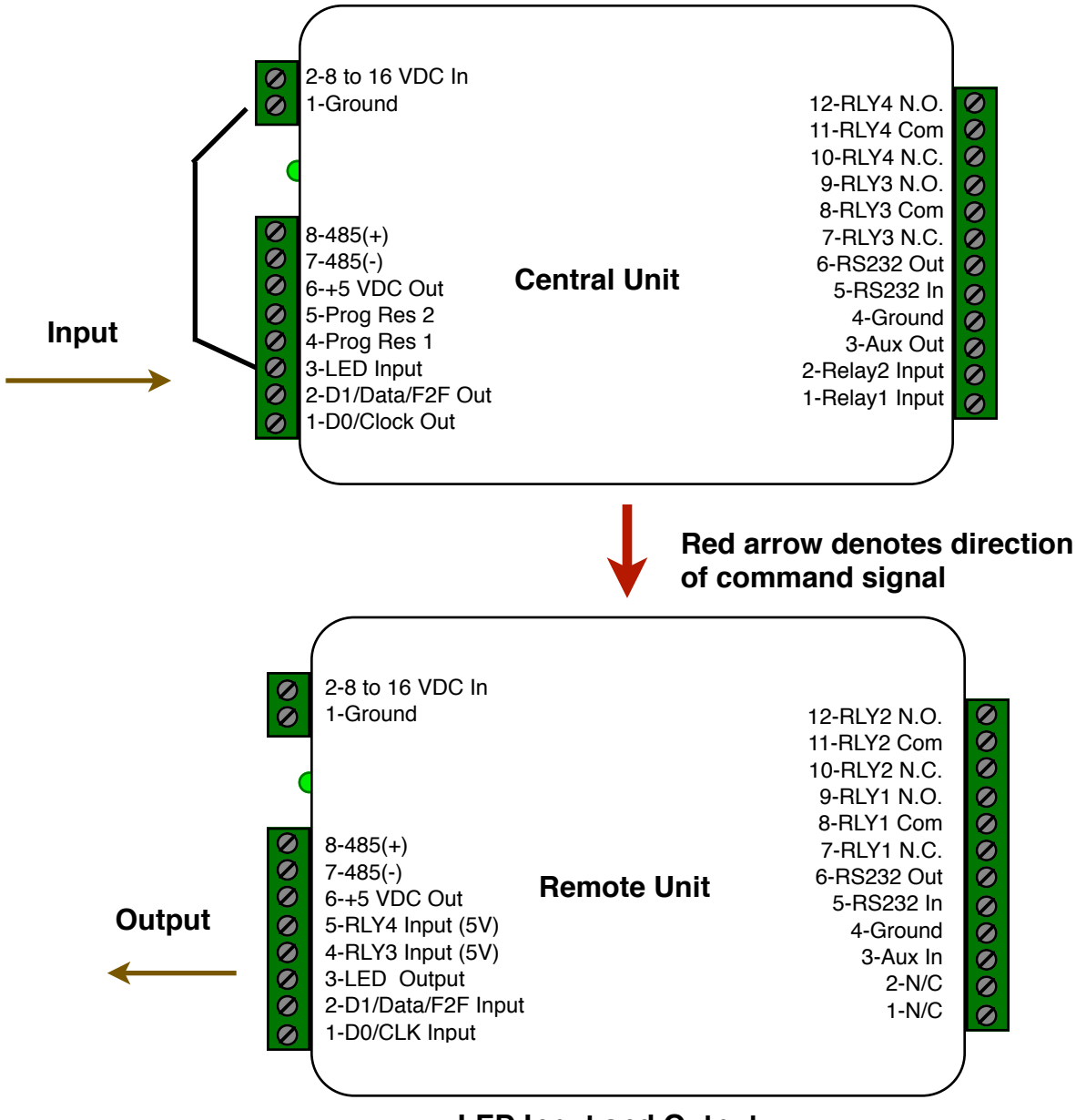
Suprex Operation and Initial Setup

I/O Controls

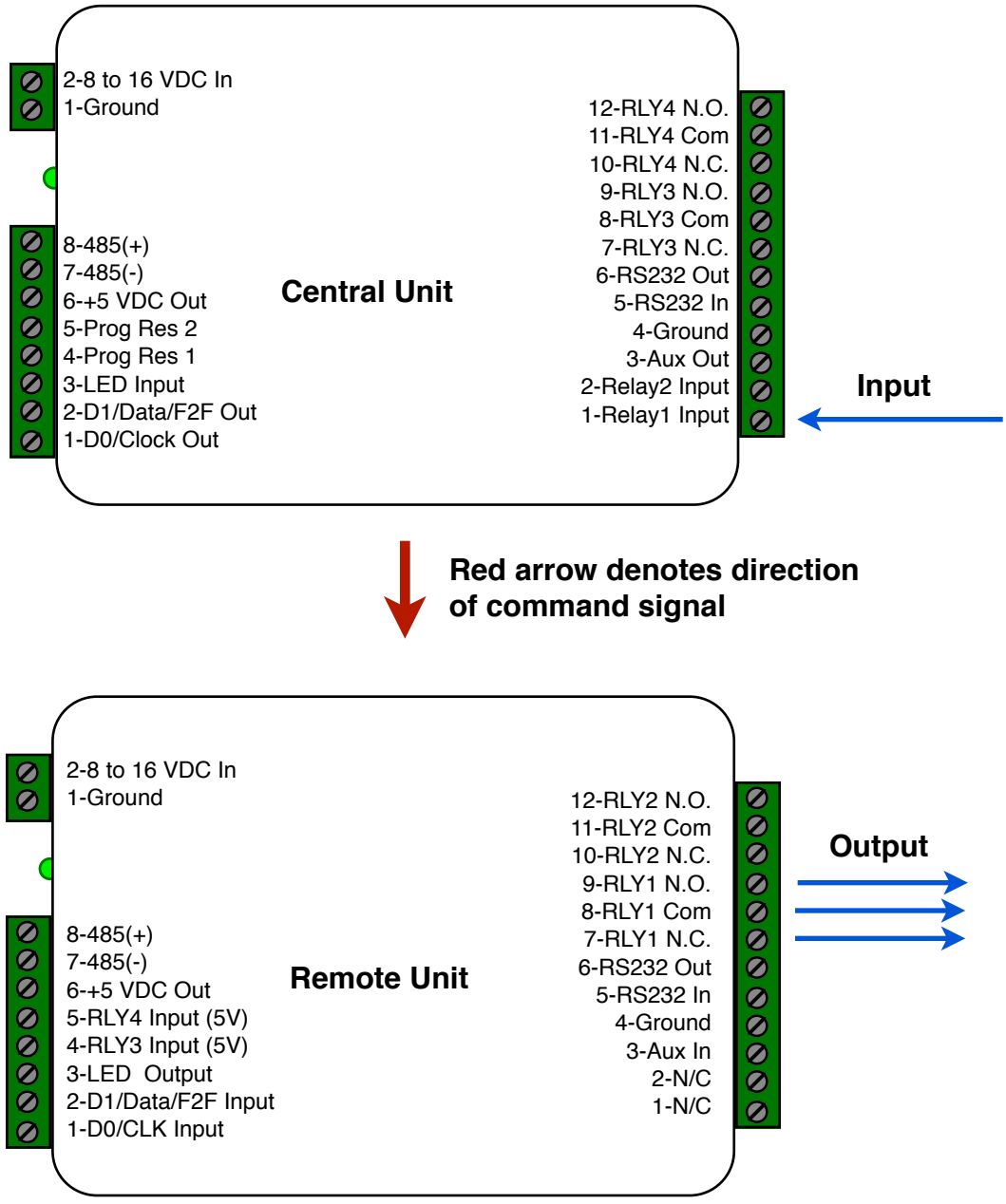
The Cypress EXP-2000 provides additional data channels to support access control hardware such as door strikes, tamper alarms, request to exit status, etc. These signals are sent to and from the Remote and Central units without the need to run additional wiring.

The accessory control I/O use active low inputs. When the inputs are floating (nothing connected) the associated output will be set to a high level. When the input is set to 0Volts (Ground) the input will activate its associated output. All Accessory outputs are Open Collector type and will switch to Ground when activated.

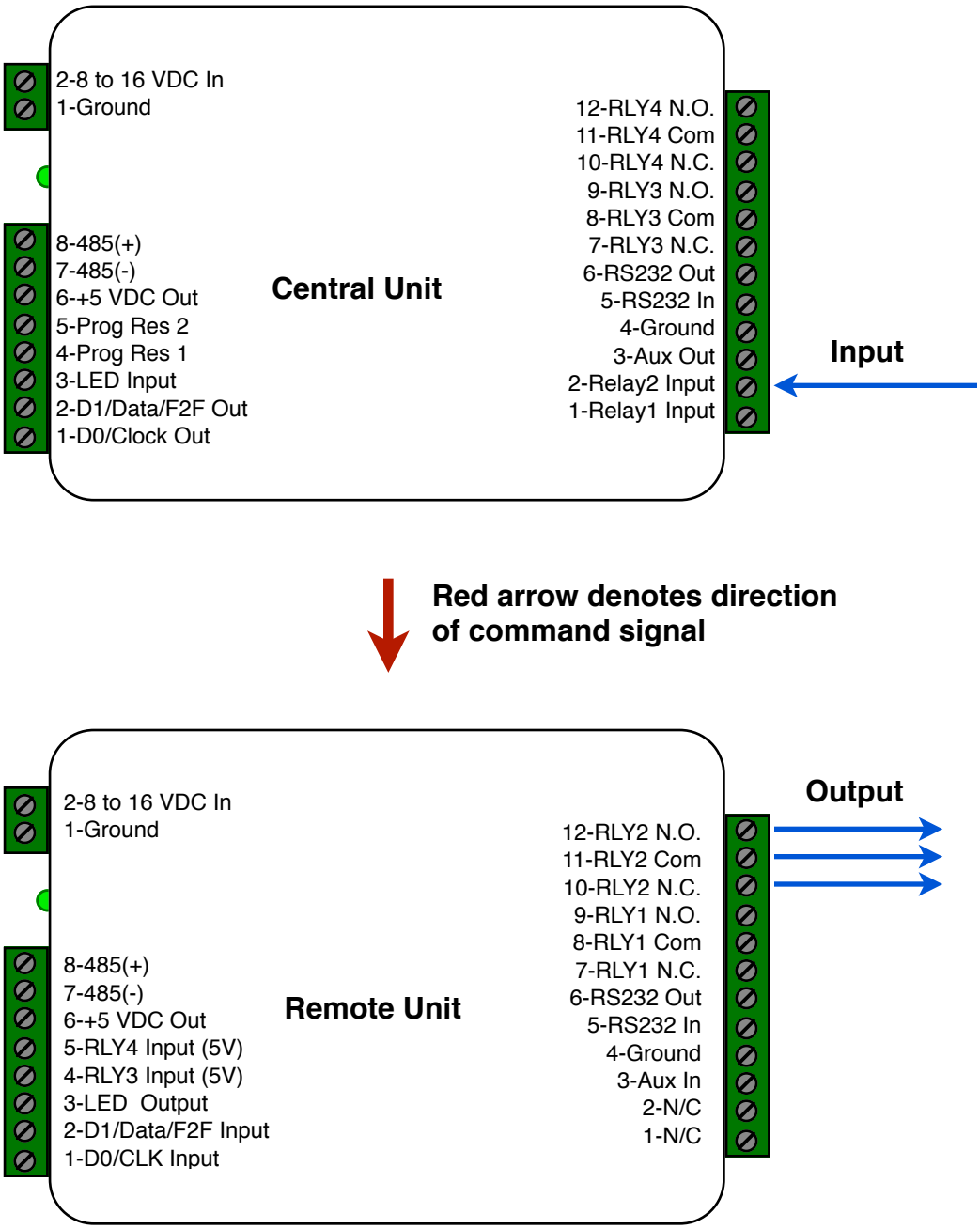
Each input will have an associated output. See the following pages for a diagram of each I/O pair.
Inputs can be tested by making a jumper connection to ground and monitoring the associated output.



LED Input and Output



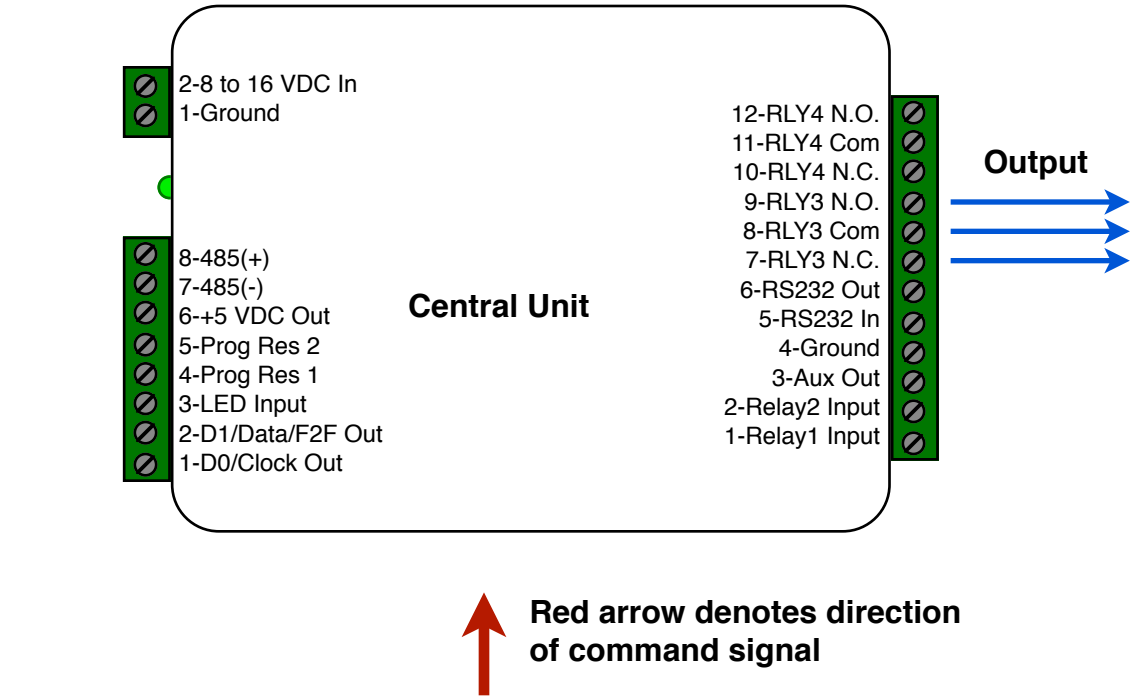
Relay 1 Input and Output



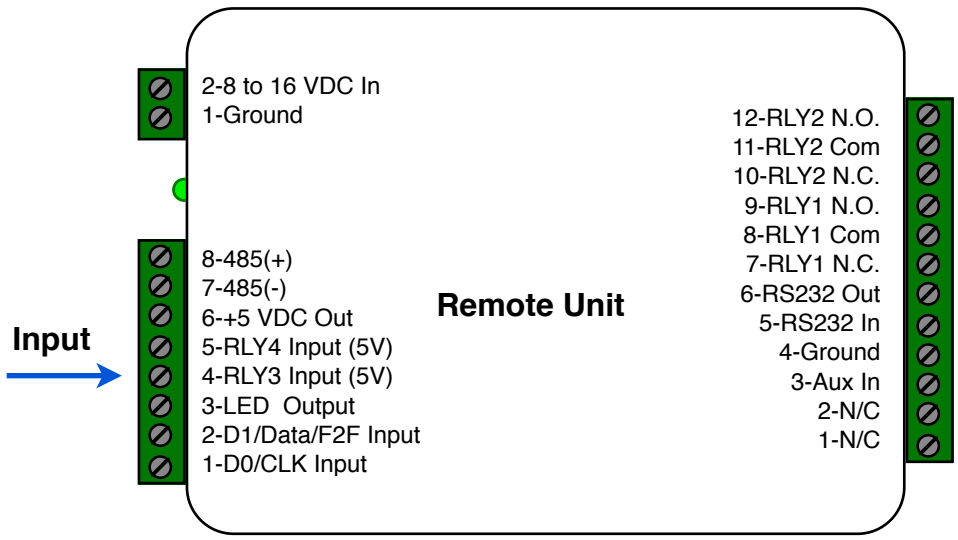
Relay 2 Input and Output

Suprex Operation and Initial Setup

I/O Controls



Red arrow denotes direction of command signal

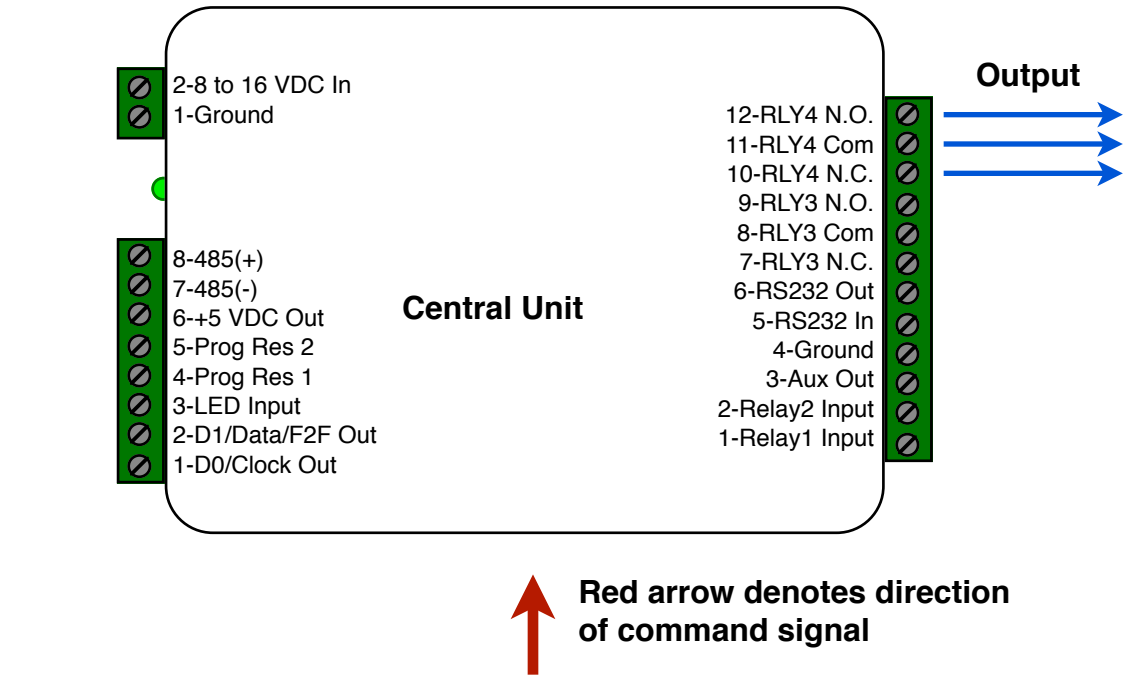


Relay 3 Input and Output

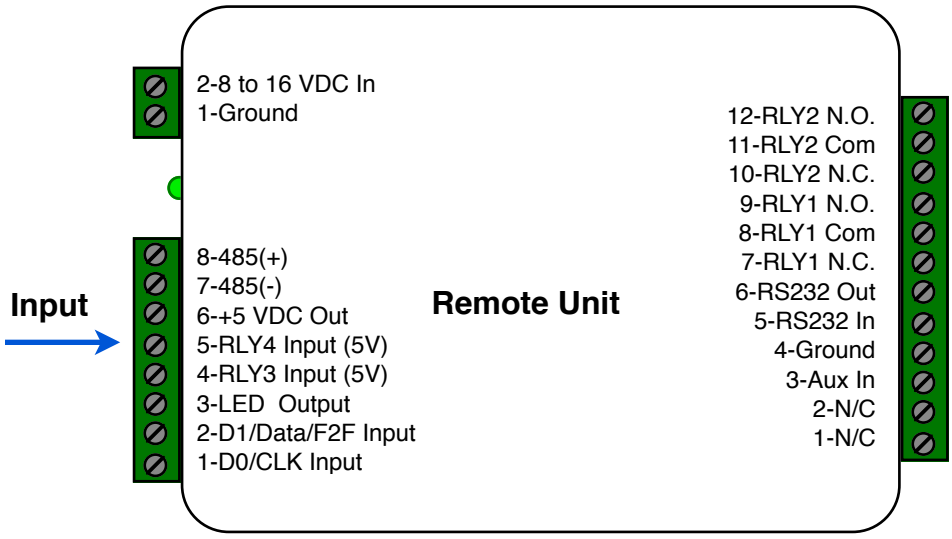
Relay 3 functions as an Alarm relay and monitors the condition of the communication link between the Central and Remote units. Relay 3 is activated when power is applied and the communication link between the Central and Remote is functioning. Relay 3 will become deactivated (Alarm condition) when either the Relay 3 input on the remote is active OR the Remote unit is unable to communicate with the Central unit.

Suprex Operation and Initial Setup

I/O Controls



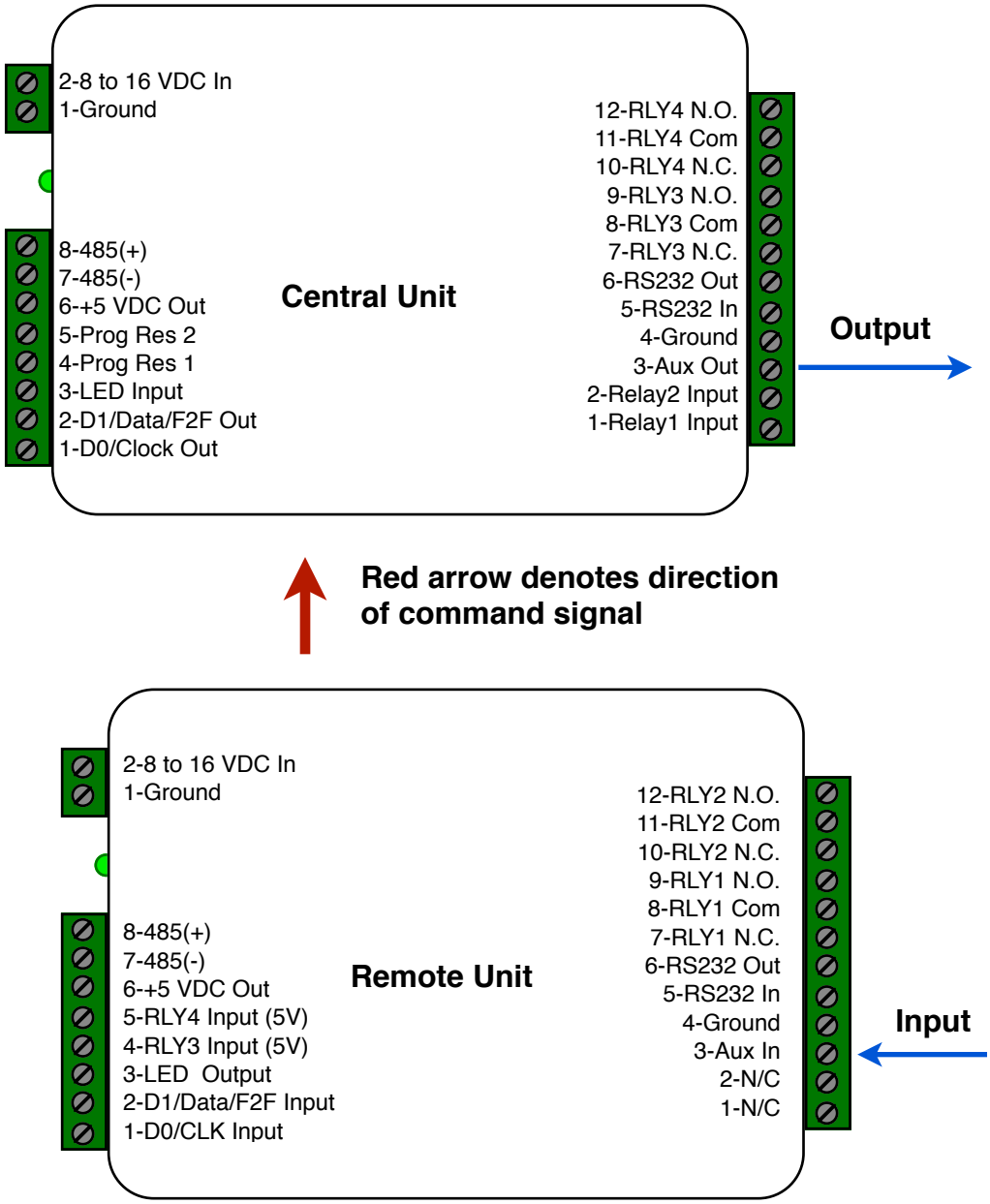
Red arrow denotes direction of command signal



Relay 4 Input and Output

Suprex Operation and Initial Setup

I/O Controls



Aux Input and Output